

The Claims

What is claimed is:

1. A personal computer system in a vehicle comprising:
5 a housing for storing the system in the vehicle in a stowed position;
a utility station that includes at least a personal computer; and
a flexible support mechanism for supporting the utility station in an unstowed
position, said support mechanism having a first and a second end, said first end of the
support mechanism for association with the utility station and said second end for
10 association with the housing, wherein the flexible support mechanism is orientable as
desired in three dimensions within the vehicle to allow repositioning of the utility station
between the stowed position and the unstowed position.
2. The personal computer system of claim 1, wherein the utility station has at
15 least one outer surface, and further comprising a utility tray disposed on the outer surface of
the utility station, wherein the personal computer is a lap top computer that is openable to
expose a computer screen and a keypad.
3. The personal computer system of claim 1, wherein the housing is a console
20 having sufficient internal space for receiving and storing the support mechanism and the
utility station therein, and the console includes a lid that is openable and closable to allow
insertion or withdrawal of the utility station and support mechanism.
4. The personal computer system of claim 3, wherein the lid includes a plurality
25 of peripheral indentations and is also closable when the support mechanism and utility
station are extended outside the console, with the support mechanism being positioned in
one of the indentations.
5. The personal computer system of claim 3, wherein the lid includes a resilient
30 peripheral edge and is also closable when the support mechanism and utility station are
extended outside the console such that the resilient edge deforms around the support
mechanism to allow the lid to close.

6. The personal computer system of claim 1, wherein the support mechanism is configured and dimensioned to extend into both a front seat area and a rear seat area of a vehicle.

5 7. The personal computer system of claim 1, wherein the support mechanism includes a locking mechanism which includes a locked state and an unlocked state, and the support mechanism is lockable via the locking mechanism into a desired position.

8. The personal computer system of claim 7, wherein the support mechanism is
10 lockable by engaging a switch within a vehicle to engage the locking mechanism.

9. The personal computer system of claim 7, wherein the locking mechanism includes at least one of a pressure lock or a vacuum lock.

15 10. The personal computer system of claim 7, further comprising a breakaway feature that is triggered when a vehicle is involved in an accident, wherein when the support mechanism is in a locked state and the breakaway feature is activated, the support mechanism becomes substantially immediately flexible.

20 11. The personal computer system of claim 10, wherein the breakaway feature includes a sensor positioned in a bumper of a vehicle for sensing an accident.

12. The personal computer system of claim 1, wherein the system further comprises a lockout mechanism having at least one sensor for sensing at least one of an
25 operational state of a vehicle, a position of a passenger within a vehicle, or a position of the utility station within a vehicle, said lockout mechanism including an operational state wherein the utility station is useable, and a nonoperational state wherein the utility station is unuseable, and wherein a positive reading of the sensor activates the nonoperational state.

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13. The personal computer system of claim 1, wherein the operational state of the vehicle includes at least moving, not moving, running, and not running; the position of the passenger includes at least driver seated, driver not seated, passenger in front seat seated, passenger in front seat not seated, passenger in rear seat seated, and passenger in rear seat not seated; and the position of the utility station includes at least positioned in driver's area, positioned in front passenger's area, positioned in rear passenger's area; wherein a positive reading of the sensor occurs when at least one of the following is sensed: vehicle moving, vehicle running, driver seated, passenger in front seat seated, passenger in rear seat seated, utility station in driver's seat area.

14. The personal computer system of claim 1, further comprising a power source for the personal computer.

15. The personal computer system of claim 14, wherein the power source is the battery of a vehicle and at least one power line extends from the personal computer to the battery of a vehicle.

16. The personal computer system of claim 14, wherein the power source is a portable battery and at least one power line extends from the personal computer to the portable battery.

17. The personal computer system of claim 1, wherein the personal computer includes a drive engine and at least one accessory.

18. The personal computer system of claim 17, wherein the drive engine is positioned in the housing.

19. The personal computer system of claim 17, wherein the at least one accessory is positioned in the housing.

20. The personal computer system of claim 1, wherein the housing is positioned in a front seat area of a vehicle substantially down the middle of a vehicle.

21. The personal computer system of claim 1, further comprising a movable and retractable connection mechanism for connecting the support mechanism to the housing.

22. The personal computer system of claim 21, wherein the connection
5 mechanism includes a lockable anchor and an anchor recoiling rack, wherein the lockable anchor is positioned within the anchor recoiling rack and the support mechanism is connected to the lockable anchor, wherein the connection mechanism is configured and dimensioned to allow the lockable anchor to move within the anchor recoiling rack until a desired position is obtained, at which point the lockable anchor may be locked in position,
10 said lockable anchor being unlockable when desired.

23. The personal computer system of claim 22, wherein the support mechanism includes a locking mechanism which includes a locked state and an unlocked state, and the support mechanism is lockable via the locking mechanism into a desired position, and
15 wherein the lockable anchor is lockable and unlockable by the locking mechanism.

24. A system for supporting a utility station relative to a base comprising:
a utility station;
a base; and
20 a flexible support mechanism for connecting the utility station to the base, the flexible support mechanism including a plurality of links; and
a movable connection mechanism for movably mounting the support mechanism relative to the base.

25. The system of claim 24, wherein the utility station is orientable as desired in three-dimensions relative to the base.

26. The system of claim 24, further comprising an anchor recoiling rack, wherein the movable connection mechanism is a locking anchor which is movable along the anchor
30 recoiling rack and the support mechanism is attached to the locking anchor.

27. The system of claim 26, wherein the anchor recoiling rack includes a channel and the locking anchor is positioned within the channel, and wherein the anchor recoiling rack provides a recoiling action which allows the support mechanism locking anchor to return to a home position upon activation of a switch by a user.

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28. The personal computer system of claim 24, wherein the support mechanism includes a locking mechanism which includes a locked state and an unlocked state, and the support mechanism is lockable via the locking mechanism into a desired position.

10 29. The personal computer system of claim 28, wherein the support mechanism is lockable by engaging a switch within a vehicle to engage the locking mechanism.

30. The personal computer system of claim 28, wherein the locking mechanism includes at least one of a pressure lock or a vacuum lock.

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31. The personal computer system of claim 26, wherein the support mechanism includes a locking mechanism which includes a locked state and an unlocked state, and the support mechanism and locking anchor are lockable via the locking mechanism into a desired position.

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32. The personal computer system of claim 1, further comprising a shock absorber positioned between the second end of the flexible support mechanism and the housing.

25 33. The personal computer system of claim 32, wherein the shock absorber comprises a layer of rubber.

34. A flexible support mechanism for supporting an object comprising:
a plurality of links connected together to form a substantially flexible chain of links;
a locking mechanism that is selectively lockable to lock together the links and form a
rigid structure, said locking mechanism including a first mode in which the locking
5 mechanism is unlocked and the chain of links is freely orientable as desired in three
dimensions, and a second mode in which the locking mechanism is locked and the chain of
links is substantially immovable and rigid.

35. The flexible support mechanism of claim 34, wherein each link includes at
10 least first and second axes of movement and the support mechanism further comprises a
plurality of link connectors for connecting the links to create the chain of links.

36. The flexible support mechanism of claim 35, wherein the links are lockable
about both the first and second axes of movement.

37. The flexible support mechanism of claim 36, wherein the first axis of each
link is spaced from and perpendicular to the second axis of each link.

38. The flexible support mechanism of claim 36, wherein the locking mechanism
20 includes a vacuum forming device that locks the links together along their respective axes by
a vacuum formed within the link connectors.

39. The flexible support mechanism of claim 38, wherein the vacuum forming
device includes at least one vacuum tube and a vacuum cylinder positioned within the link
25 connectors.

40. The flexible support mechanism of claim 36, wherein the locking mechanism
includes a pressure forming device that locks the links together along their respective axes
by pressure created within the link connectors.

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41. The flexible support mechanism of claim 40, wherein the pressure forming device includes at least one pressure tube and a pressure cylinder positioned within the link connectors.

5 42. The flexible support mechanism of claim 34, further comprising a resilient sleeve positioned around the plurality of links.

10 43. A medical support device comprising:
the support mechanism of claim 34; and
a medical device.

15 44. A flexible support mechanism for holding an object comprising:
a plurality of links, each having a first end and a second end, with at least one leg extending from each end thereof;
a plurality of connectors for connecting the legs of corresponding links to form a chain of links;
wherein said chain of links is flexible such that the position of the individual links in the chain of links is orientable as desired in three dimensions.

20 45. The flexible support mechanism of claim 44, wherein the chain of links includes a first link and a last link, with the first link associated with a connection mechanism for connecting the first link to a base and the last link associated with an object being supported.

25 46. The flexible support mechanism of claim 44, wherein each link of the plurality of links has a first and a second end, with two legs extending from each end, wherein the connectors connect two legs from one end of one link with two legs from one end of an adjacent link for movement about an axis defined by a longitudinal axis of each connector.

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47. The flexible support mechanism of claim 46, wherein the two legs on one end of a link each include an opening through which at least part of a connector extends.

48. The flexible support mechanism of claim 44, which further comprises a friction pad associated with each leg or connector to provide frictional association between the legs and the connectors.

5 49. The flexible support mechanism of claim 44, further comprising a locking mechanism that is selectively lockable to lock together the links and form a rigid structure, said locking mechanism including a first mode in which the locking mechanism is unlocked and the chain of links is freely movable, and a second mode in which the locking mechanism is locked and the chain of links is substantially immovable and rigid.

10 50. The flexible support mechanism of claim 49, wherein the locking mechanism comprises one of a pressure locking device and a vacuum locking device.

51. A flexible support mechanism for use in a vehicle comprising:
15 a plurality of links connected together to form a substantially flexible chain of links, the chain of links being oriented as desired in three-dimensions; and
a base for connecting the chain of links to an interior of a vehicle,
wherein the links are configured and dimensioned to support an object positioned at one end of the chain.

20 52. The flexible support mechanism of claim 51, wherein the vehicle is an automobile having a front seat area and a rear seat area and the base is positioned substantially in a front seat area, and wherein the chain of links is movable from a position in a front seat area to a position in a back seat area and returnable to a position in a front seat
25 area.

53. The flexible support mechanism of claim 51, wherein the object being supported is a utility station that includes a personal computer.

54. A console for retractably supporting a utility station in an automobile comprising:

a console body having a substantially hollow interior and an opening for insertion and withdrawal of a utility station into the console body; and

5 a base positioned within the console body for attaching a support mechanism that supports a utility station.

55. The console of claim 54, further comprising a shock absorber positioned between the console body and the base.

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56. The console of claim 54, wherein a cover is associated with the opening defined in the console body and the cover is openable for inserting and withdrawing a utility station and closable when a utility station is stowed inside the console body.

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57. The console of claim 54, wherein the base includes a locking anchor for connecting a support mechanism to the base and an anchor recoiling rack, with the locking anchor being associated with the anchor recoiling rack for movement along the rack within the base.

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58. The console of claim 57, further comprising a shock absorber associated with the anchor recoiling rack.

59. The console of claim 54, wherein the console body is configured and dimensioned to entirely conceal a utility station and a support mechanism within the
25 console; and further comprising a cover operatively coupled to the console for closing the opening in the console.

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60. The console of claim 54, wherein the console is positionable in the front seat area or rear seat area of a vehicle.

61. A method for supporting an object with a flexible support mechanism that is attached to a base comprising:

providing an object at the end of a flexible support mechanism;

moving the object to a desired location by moving the flexible support mechanism;

5 and

rigidizing the flexible support mechanism such that the support mechanism becomes rigid to firmly position the object at the desired location.

62. The method of claim 61, further comprising:

10 de-rigidizing the support mechanism to allow free movement of the support mechanism relative to the base; and

stowing the support mechanism and object in a housing that is associated with the base.

15 63. The method of claim 61, wherein the housing is provided around the base so that the support mechanism and object are concealed when stowed in the housing.

64. The method of claim 61, further comprising:

providing a signal to the support mechanism that an accident has been encountered;

20 and

de-rigidizing the support mechanism upon receipt of the accident signal to allow free movement of the support mechanism relative to the base.

25 65. The method of claim 61, further comprising moving the support mechanism relative to the housing to obtain a desired position for the object.

66. The method of claim 61, further comprising providing power to the object via the support mechanism.